



REGION 3: THE MID-ATLANTIC STATES

SERVING THE DISTRICT OF COLUMBIA, DELAWARE, MARYLAND, PENNSYLVANIA, VIRGINIA AND WEST VIRGINIA
Environmental Science Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE:	March 12, 2012
SUBJECT:	Quality Assurance Project Plan for the Interlaboratory Verification and Validation of Diethylene Glycol, Triethylene Glycol, Tetraethylene Glycol, 2-Butoxyethanol and 2-Methoxyethanol in Ground and Surface Waters by Liquid Chromatography /Tandem Mass Spectroscopy, [DCN 100050]
FROM:	Michael H. Mahoney, Chemist OASQA/QAT (3EA22)
THROUGH:	Fred Foreman, Chief, Technical Services Branch OASQA (3EA22)
TO:	Brian Schumacher, Branch Chief, ESD/ECB NERL Las Vegas

This QAPP was prepared by Lawrence Zintek of USEPA Region 5 and reviewed against the appropriate guidance documents. Recommendations for additional discussion and clarification have been provided for your review. This study is an interlaboratory appraisal of a USEPA Region 3 glycols analysis in which multiple laboratories will evaluate this method using quantitatively prepared standards. Comparison of these independent laboratory studies will reflect the ruggedness and accuracy of the test method. Most importantly, this study will determine if the analysis is capable of detecting the analytes of concern, at the levels of interest, in the matrix of choice. It is recommended that the following comments be addressed and the plan re-submitted for review:

Major Concerns:

1) [Section A7 Quality Objectives and Criteria for Measurement Data]

- a) This section confuses an older definition of DQO with the PARCC parameters. The PARCCs are now known as Data Quality Indicators or Data Quality Measurements. The current definition of DQO is established in EPA G4 document "Guidance on Systematic Planning using the Data Quality Objectives Process "(QA/G-4) EPA/240/B-06/001 February 2006. DQO requirements for this QAPP need to be assessed against that document. The DQO assessment of the laboratories against each other will be the heart of this study. It is recommended that a strong statistical evaluation scheme be adopted for the evaluation. To that effect:
- b) Since five laboratories are performing these analyses a statistical evaluation should be performed for each analyte set to check for outliers. A statistical test "Simple One Way Analysis of Variance¹" should be applied or an equivalent. This test will determine if the values of the five laboratories are all in the same 'family' of values.
- c) The parameter of "decision threshold" should detail the criteria for the interlaboratory comparisons. Such as: The PE samples results from the five laboratories need to have their

¹ Available on the HQ QA page and on the web.

variance determined and acceptance criteria range established for those analytes; if the variance of the laboratories agrees to within 20% of the established average, than the analysis is considered to be robust, precise and acceptable for normal use. If the variance exceeds 40% the method will need further evaluation for systematic errors.² The manner in which the laboratories results will be assessed needs to be stipulated and recorded. [These values are arbitrarily picked by the reviewer. Real target values should be established by an analyst with extensive LC/MS/MS experience.]

- 2) Each laboratories determination of the standard deviation (sd) is critical parameter for method detection limit (MDL) = 3sd and the practical quantization limit=10sd³. The establishment of the sd should follow 40CFR 136 Part B such that the concentration of the 7 replicate standards is within 3-5 times the expected MDL value; and the replicates should not be run consecutively. Failure to follow those guidelines will lead to erroneously low determined sd.

Concerns:

- 1) [Section B2 does not really apply to this study as the samples will be prepared by a QA laboratory.
- 2) The definitions and frequency of analyses for laboratory replicate, laboratory fortified matrix, etc. should be defined in the SOP.
- 3) The 21 samples scheduled for analysis at each laboratory should have a labeling scheme which does not identify the type of the samples in any way.

The comments below are provided for consideration and inclusion in future documents. As the comment below will not adversely affect the overall quality of the data generated as part of the planned sampling event, the Quality Assurance Team will not review the responses to this section.

Comments

1. National guidance recommends the use of a document control header for QAPPs and FSPs. Document control headers consist of identification of each page of the document with a section number, revision number, revision date, and page number.
2. It is recommended that the document include a references section and an acronym glossary.

² Another method of interlaboratory comparison is: Graphical Diagnosis of Interlaboratory Test Results, W.Y. Youden NBS , Industrial Quality Control, VolXV No13, May 1959.

³ per McDougall, D. et al., Guidelines for Data Acquisition and Data Evaluation in Environmental Chemistry, Anal. Chem. 52,2242-2249, 1980



REGION 3: THE MID-ATLANTIC STATES

SERVING THE DISTRICT OF COLUMBIA, DELAWARE, MARYLAND, PENNSYLVANIA, VIRGINIA AND WEST VIRGINIA
Environmental Science Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE:	March 6, 2012
SUBJECT:	Work Plan for Residential Sampling QA/QC Dimock Groundwater Pennsylvania (Rev01) [DCN 120046]
FROM:	Michael H. Mahoney, Chemist OASQA/QAT (3EA22)
THROUGH:	Fred Foreman, Chief, Technical Services Branch OASQA (3EA22)
TO:	Richard Rupert, OSC

A Work Plan, prepared by TechLaw was reviewed against the appropriate guidance documents,¹ and against recommendations for additional discussion and clarification provided January 3, 2012 QA Branch memo, (DCN 120024). Comments from the 1/3/12 review are italicized below; evaluations of those comments follow in BOLD. Additional comments of newly submitted material follow as continuations of the original numbering sequence in regular font. It is recommended that the following concerns be addressed and the plan re-submitted for review before the plan is approved.

MAJOR CONCERNS:

- 1) The methods of analysis and their preparation steps need to be specified for this sampling event. The CAS numbers and detection levels need to be listed for all analytes. The detection levels are determined by the decision thresholds, (see #4 below) and are specific for this project. Those detection levels will determine if the analytical method is capable of achieving the required decision thresholds. If the decision threshold is changed the specific analytical method may need to be changed also to achieve the required detection level. This Work Plan and its associated analytical suite cannot be fully evaluated until those decision thresholds are established.*

¹ The review was based on guidance provided in "Guidance on Systematic Planning using the Data Quality Objectives Process (QA/G-4) EPA/240/B-06/001 February 2006, "EPA Requirements for Quality Assurance Project Plans" (QA/G5) EPA/240/R-02/009 December 2002, "Guidance on Environmental Data Verification and Data Validation", Re-issued January 2008 (EPA QA/G-8), "Contract Laboratory Program National Functional Guidelines for Organic Data Review", EPA 540/R-99/008 (USEPA, 1999), "Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", EPA 540/R-034/004 (USEPA, 2004c), "Guidance for Data Quality Assessment: Practical Methods for Data Analysis" (QA/G9, EPA/240/B-06/003 February 2006, "Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analysis," April 1993, and "Region III Modifications to National Functional Guidelines for Organic Data Review Multi-media, Multi-concentration (OLMO1.0-OLMO1.9) September 1994.

The analysis method and analytes are now listed, but no other portion of this comment has been addressed. Since the decision thresholds have not been established the applicability of the analytical method/extraction procedure cannot be evaluated.

- 2) *The sampling chain is specified in the text but does not mention any radiological testing as indicated in the analytical summary.*

Radiological sample collection, sample containers, preservatives... have not been addressed.

- 3) *The radiological testing of these samples is undoubtedly warranted, but needs some justification in the text. For example: the manner in which the Delta Carbon 13 and Delta Deuterium count will be utilized should be discussed in the text.*

This comment has not been addressed.

- 4) *A decision threshold is necessary before sampling begins. The decision threshold will determine the applicability of the proposed analytical methods (see #1 above) and their ability to achieve the necessary sensitivity for this sampling event. As part of the planning process, the sampling event should have its sampling goals delineated in action statements. Usually these are best formulated in "If...Then" statements. For example: "If compound X is found below the RBC threshold Y, then no further action is contemplated. If it is above the threshold, then remediation options will be considered and implemented as appropriate." However, before the language structure is articulated, a clear logical process of the proposed actions for this site needs to be in place. In this case, it would have been logical to sample pre-drilling and post-drilling to demonstrate an impact. There are two alternatives at this time: 1) Establish actual numeric levels for each analytical parameter. This will lead to a statement: If the value of these parameters exceeds the established threshold, then we will consider the well to have been impacted and will evaluate further studies or remediation. 2) Alternatively, if it is possible to find an area which has the same geological formation and aquifer which has not been impacted by any drilling/mining process, then use samples obtained there as a background for comparison. In the latter scenario any marked increase in the analytes would be considered an impact. A hydrologist should be consulted to determine the expected maximum allowable concentration before positives could be considered an observable impact.*

This comment has not been addressed.

- 5) *It is recommended that Conductivity be added to the analytical suite for all sample locations as it has been proven to be an excellent general indicator of impacts due to fracking process.*

Conductivity will be monitored in the field to indicate well stabilization. But those values need to be recorded for evaluation and assessment. This comment has not been addressed.

New Major Concerns:

- 6) Isotech is identified as a laboratory performing some of the analyses for this project. The analyses to be performed are not identified by any ASTM or EPA analysis number. A bench level SOP of the methods should be submitted for EPA review to evaluate the quality of the analysis. This is also necessary to provide a sufficient background to allow for data validation of their results.
 - 7) Surface water sampling locations need to be identified, or their selection process delineated.
-

CONCERNS:

- 1) *The timeline for turnaround of the samples: sampling in the field, shipping, analysis, data validation through to the final report is very challenging for 70 samples in 21 days. To produce results this fast will need to be justified, and it will incur additional costs. Please contact Colleen Walling to assist in the Data Validation. Please contact our sample brokerage group through Fred Foreman to assist in placing as many of these samples as possible for fast turnaround.*

Sampling has occurred for this site, so this comment has been satisfied.

- 2) *Whenever a mass spectral analysis is requested using SW-846 methods, such as 8270C and 8260B, the laboratory should submit a Tentatively Identified Compound (TIC) list with each analysis. The TIC analysis can identify unknown and unexpected compounds at all stages of investigation and needs to be requested from the laboratory before samples are submitted.*

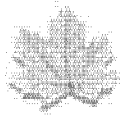
This comment has not been addressed and would be critical for an investigative study of this nature. EPA laboratories will produce a TIC list as a matter of routine, but non-EPA laboratories will be used in this study and they will need to be directed to perform the TIC analysis. This comment has not been addressed.

The comments below are provided for consideration and inclusion in future documents. As the comments below will not adversely affect the overall quality of the data generated as part of the planned sampling event, the Quality Assurance Team will not review the responses to this section.

Comments

- 1. Regional guidance recommends the use of a document control header for QAPPs and FSPs. Document control headers consist of identification of each page of the document with a section number, revision number, revision date, and page number.*
- 2. Table 2-12/29/11 references a "biocide pill" to be used as a preservative in certain analyses. Although its intended use is obvious, the chemical involved may need to be duplicated by another laboratory at a later date. Please identify the chemical makeup of the pill.*
- 3. The title page identifies Richard Fetzner as the OSC for this project; other paperwork identifies Richard Rupert. Please rectify or explain this disagreement.*

If you have any questions or comments, please contact me at (410) 305-2631.



Dimock Lab Status Report for 2/28

Cynthia Caporale to: R3 ESC-LB

02/29/2012 10:08 AM

Cc: Richard Rupert, Cynthia Metzger, Fred Foreman, Mike Mahoney, Jill Bilyeu

From: Cynthia Caporale/ESC/R3/USEPA/US

To: R3 ESC-LB

Cc: Richard Rupert/R3/USEPA/US, Cynthia Metzger/ESC/R3/USEPA/US@EPA, Fred Foreman/ESC/R3/USEPA/US@EPA, Mike Mahoney/ESC/R3/USEPA/US@EPA, Jill Bilyeu/ESC/R3/USEPA/US@EPA



Dimock Groundwater Site_Lab Efforts Summary_Feb 28_ 2012.docx

Cynthia Caporale, Chief
OASQA Laboratory Branch
U.S. EPA Region III
Environmental Science Center
Fort Meade, MD
(410) 305-2732
Fax: (410) 305-3095

Dimock Residential GW Site – Lab Status

2/28/2012

Sample Status

Sampling will begin March 5th to capture the remaining homes. Currently, plans are to sample Monday and Tuesday at four homes (8 samples + QC). Additional homes may be added during the first two weeks of March; however, no Friday sampling (avoiding Saturday delivery).

New analytical request forms have been submitted and will be distributed by March 1st. Refer to analytical request forms for specific method requirements. Submission of the preliminary report is still needed.

Analysis Status

Most analysis is complete or proceeding on schedule.

Reporting Status

Preliminary Report for all samples was submitted 2/27/2012. Report is complete except for one sample assigned to Test America.

Final lab reports uploaded to FTP site for the entire first week of sampling for all laboratories. Final reports for second week of sampling are being uploaded this week. The roll-out for final reports will be needed each week for the next four weeks.

All R2 and R9 reports are uploaded to FTP site.

Additional data packages expected to arrive from contracted laboratories this week.

R3	SVOCs*, VOCs, Metals*, Alcohols, Glycols*, Anions, O&G, TDS/TSS
R2	MBAS
R9	Dissolved Gases*, DRO, GRO
NAREL	Rad
NEL	Micro*
PACE	Ethylene Glycol*
Isotech	Isotech
TestAmerica	Ethylene Glycol *+ Glycols*

*includes expedited parameters

WRK
U.S. EPA Region
3

SAMPLE

WRK

SAMPLE

U.S. EPA Region 3
2/2/2012

2/2/2012 13:44

13:45

1201013	1	FB01
1201013	2	FB01-F
1201013	3	HW19
1201013	4	HW19-F
1201013	5	HW19-P
1201013	6	HW19-PF
1201013	7	FB02
1201013	8	FB02-F
1201013	9	HW04
1201013	10	HW04-F
1201013	11	TB01
1201013	12	FB03
1201013	13	HW02
1201013	14	HW02z
1201013	15	HW01
1201013	16	HW05
1201013	17	HW06
1201013	18	HW06-F
1201013	19	FB03F
1201013	20	HW12
1201013	21	HW02z-F
1201013	22	HW01-F
1201013	23	HW02-F
1201013	24	HW05-F
1201013	25	TB02
1201013	26	TB03
1201013	27	HW08a-F
1201013	28	HW08a
1201013	29	FB04
1201013	30	FB05
1201013	31	HW24
1201013	32	HW24-P
1201013	33	HW12
1201013	34	HW17
1201013	35	HW14
1201013	36	HW14-P
1201013	37	FB04-F
1201013	38	FB05-F
1201013	39	HW12-F
1201013	40	HW17-F

1201015	1	EB01
1201015	2	FB06
1201015	3	HW18
1201015	4	HW13
1201015	5	HW18-P
1201015	6	HW18-F
1201015	7	EB01-F
1201015	8	FB06-F
1201015	9	HW13-F
1201015	10	HW18-PF
1201015	11	HW25-P
1201015	12	HW25-PF
1201015	13	HW26-P
1201015	14	HW26-PF
1201015	15	HW26
1201015	16	HW26-F
1201015	17	HW35
1201015	18	HW35-F
1201015	19	HW20
1201015	20	HW20-F
1201015	21	HW20-P
1201015	22	HW20-PF
1201015	23	TB08
1201015	24	TB09
1201015	25	HW32
1201015	26	HW32-P
1201015	27	HW32-PF
1201015	28	TB13
1201015	29	HW32-F
1201015	30	HW33
1201015	31	HW33a-P
1201015	32	HW33a-PF
1201015	33	HW33b-P
1201015	34	HW33-F
1201015	35	TB12
1201015	36	HW33b-PF
1201015	37	HW29z
1201015	38	HW29z-F
1201015	39	HW29
1201015	40	HW29-F

1201013	41	HW14-F	1201015	41	HW52
1201013	42	HW24-PF	1201015	42	HW52-F
1201013	43	HW24-F	1201015	43	FB07
1201013	44	HW14-PF	1201015	44	FB07-F
1201013	45	TB05	1201015	45	TB10
1201013	46	TB07	1201015	46	TB11
1201013	47	TB06			
1201013	48	TB04			

total	48		46
-------	----	--	----

total	244		
WRK	SAMPLE	WRK	SAMPLE
U.S. EPA Region		U.S. EPA Region	
3		3	

2/7/2012 15:51

1202001	1	HW42
1202001	2	HW42-F
1202001	3	HW46
1202001	4	HW46-F
1202001	5	HW46-P
1202001	6	TB15
1202001	7	FB09
1202001	8	FB08
1202001	9	FB08-F
1202001	10	HW34a
1202001	11	HW34a-F
1202001	12	FB09-F
1202001	13	HW42z
1202001	14	HW42z-F
1202001	15	TB16
1202001	16	HW46-PF
1202001	17	HW34a-P
1202001	18	HW34a-PF
1202001	19	TB14
1202001	20	HW28a
1202001	21	HW28a-F
1202001	22	HW28a-P
1202001	23	HW39
1202001	24	HW39-P
1202001	25	HW39-PF
1202001	26	HW40
1202001	27	HW40-F
1202001	28	HW40-P
1202001	29	HW40-PF

2/9/2012 13:35

1202003	1	HW45
1202003	2	HW45-P
1202003	3	HW43-P
1202003	4	HW43
1202003	5	EB02
1202003	6	HW45-F
1202003	7	HW45-PF
1202003	8	HW43-F
1202003	9	EB02-F
1202003	10	HW43-PF
1202003	11	TB23
1202003	12	TB24
1202003	13	HW15a-P
1202003	14	HW31-P
1202003	15	HW30
1202003	16	HW30-P
1202003	17	HW31
1202003	18	FB11
1202003	19	HW31z
1202003	20	HW15a
1202003	21	TB25
1202003	22	TB26
1202003	23	TB28
1202003	24	HW30-PF
1202003	25	HW15a-F
1202003	26	HW31-F
1202003	27	HW31z-F
1202003	28	HW30-F
1202003	29	HW31-PF

1202001	30	HW41	1202003	30	HW15a-PF
1202001	31	HW41-F	1202003	31	FB11-F
1202001	32	HW41-P	1202003	32	HW38-P
1202001	33	HW41-PF	1202003	33	FB13
1202001	34	TB17	1202003	34	FB12
1202001	35	TB18	1202003	35	HW47
1202001	36	TB19	1202003	36	HW51
1202001	37	HW28b-PF	1202003	37	HW38
1202001	38	HW28a-PF	1202003	38	HW51-P
1202001	39	HW39-F	1202003	39	HW47-P
1202001	40	HW09-PF	1202003	40	HW51-PF
1202001	41	FB10-F	1202003	41	HW38-F
1202001	42	HW09-F	1202003	42	HW47-PF
1202001	43	HW28b-P	1202003	43	HW38-PF
1202001	44	HW09	1202003	44	FB13-F
1202001	45	HW09-P	1202003	45	FB12-F
1202001	46	FB10	1202003	46	HW51-F
1202001	47	TB20	1202003	47	HW47-F
1202001	48	HW39-P	1202003	48	TB30
1202001	49	TB21	1202003	49	TB27
1202001	50	TB22	1202003	50	TB29
1202001	51	HW39-RO			
	51			50	

WRK SAMPLE SAMPLENAME

U.S. EPA Region

3

2/13/2012 16:21

1202004	1	HW48
1202004	2	HW48-F
1202004	3	HW48z
1202004	4	HW48z-F
1202004	5	TB31
1202004	6	HW21
1202004	7	HW21-F
1202004	8	HW21z
1202004	9	HW21z-F
1202004	10	TB33
1202004	11	HW23-P
1202004	12	TB32
1202004	13	HW22
1202004	14	HW22-F
1202004	15	HW23
1202004	16	HW23-F

1202004	17	HW22-P
1202004	18	TB34
1202004	19	HW23-PF
1202004	20	HW22-PF
1202004	21	HW36n
1202004	22	HW49
1202004	23	HW16-P
1202004	24	HW54-P
1202004	25	FB14
1202004	26	HW16z
1202004	27	HW16
1202004	28	HW44
1202004	29	HW49-P
1202004	30	HW36n-P
1202004	31	FB15
1202004	32	HW54
1202004	33	HW36n-F
1202004	34	HW49-F
1202004	35	HW54-PF
1202004	36	HW16-PF
1202004	37	FB14-F
1202004	38	HW16z-F
1202004	39	HW16-F
1202004	40	HW44-F
1202004	41	HW54-F
1202004	42	HW36n-PF
1202004	43	HW49-PF
1202004	44	FB15-F
1202004	45	TB35
1202004	46	TB39
1202004	47	TB37
1202004	48	TB38
1202004	49	TB36

100

100

100

100

100

100

100

100

THE LEADER IN ENERGY & ENVIRONMENTAL POLICY NEWS

9. NATURAL GAS:

River bromide levels high despite recycling of most Marcellus wastewater

Published: Monday, February 20, 2012

Marcellus Shale drillers are recycling more of their briny, chemical-laced wastewater, but bromide levels in rivers are not showing expected declines, according to an analysis of Pennsylvania state data released Friday.

State officials requested that drillers keep shale wastewater out of rivers that supply drinking water. The data show that about 97 percent of the shale wastewater generated in the second half of 2011 was either recycled, sent to deep-injection wells or taken to treatment plants that do not discharge into waterways.

But with salty bromide levels still high, experts are wondering if a loophole in disposal regulations is still letting significant quantities flow into rivers and streams.

Pennsylvania's highly publicized plan for voluntary compliance by Marcellus drillers did not apply to the thousands of other oil and gas projects in the state. The new state data show that about 1.86 million barrels of drilling wastewater from non-Marcellus wells was still sent to treatment plants and discharged into waterways in the second half of last year.

"They ought to get all of that out of the water. It's obviously hazardous; it presents a public health hazard. What's good for the Marcellus wells should be applied to the other wells, too," said Jan Jarrett, who leads the environmental group PennFuture.

Kathryn Klaber, president of the Marcellus Shale Coalition, an industry group, said it was never accurate to blame the whole bromide problem on shale gas drillers.

"We know there are quite a few other sources going into Pennsylvania waterways," she said. "You have to start looking at other places."

Coal-fired power plants and other industries also produce bromides. Bromides themselves are not considered pollutants, but they combine with chlorine used in water treatment to create trihalomethanes, which can cause cancer if ingested over a long stretch of time (Kevin Begos, *AP/San Francisco Chronicle*, Feb. 17). — AS.

Advertisement



[E&E Home](#) | [About](#) | [Start a Trial](#) | [Get E-mail Alerts](#) | [Advertise](#) | [Staff Directory](#) | [Reports](#) | [Public Site](#)

[RSS](#)

The Premier Information Source for Professionals Who Track Environmental and Energy Policy.

© 1996-2012 E&E Publishing, LLC [Privacy Policy](#) [Site Map](#)



Environmental Protection Agency
Office of Emergency and Remedial Response
TECHNICAL DIRECTION FORM
Region 3 - ESAT

Contract No.: EP-W-06-016

Contractor: Lockheed/Martin Svcs Inc.

Task Order No.: 0042

Sub-Task No.:

Technical Direction No. 02085

Task Order Project Officer: Colleen K. Walling Phone: (410) 305-2763

Description of Task: Provide Data Review Data Validation other related DV support tasks for the Dimock Site fast turn-around-time analyses & data review - Highest Priority

Account Number: 2012TO3N303DC6A3TARS00

Deliverable Due Date: for 2/16/2012 - 3/2/2012 48 hr TAT from receipt of data

TASK DESCRIPTION: DIMOCK Site High Priority

ESAT shall perform data validation and data review including related support task activities as highest priority fast turnaround time within 48 hrs or less for this Superfund site for the parameters listed in the attachments; **and any other parameters included in the data packages as requested (e.g., metals, semi-volatiles, etc.) for very fast TAT.**

ESAT shall follow the SOPs, Task Order SOW, and all guidance documents to the best of their ability, and utilize their technical expertise for review of data received from either the Contract Laboratory Program (CLP); and/or, from Tier IV, 3rd party outside laboratories for the parameters listed in the attachments.

ESAT shall discuss with the Technical Monitors any concerns or anomalies with the data.

ESAT shall not hold up the data review process to perform the CEAT audits. The CEAT audits can be performed at a later date after the data reviews/data validations have been completed. However, ESAT shall note missing information/deliverables during the review process.

ESAT shall be aware that some of the analytical methods are proprietary and may find the need to utilize their professional experience, knowledge, and judgment to assess the data. ESAT shall be aware that this is sensitive data.

Any questions or concerns that may arise shall be discussed with the Technical Monitors.

Deliverables

Data Validation Reports within 48 hours of receipt of the data.

The Technical Monitors: Ed Messer, J. Burman, Mike Mahoney, Fred Foreman, Brandon McDonald, Cynthia Caporale, and Terry Simpson.

I CERTIFY THAT THIS TECHNICAL DIRECTIVE DOES NOT REQUEST SERVICES THAT ARE INHERENTLY GOVERNMENTAL FUNCTIONS AND THAT IT DOES NOT ALTER THE (1) STATEMENT OF WORK, (2) LEVEL OF EFFORT, (3) COST OF PERFORMING THE AUTHORIZED WORK, (4) NUMBER OF DELIVERABLES, OR (5) THE DUE DATES OF DELIVERABLES FOR THE ABOVE REFERENCED TASK ORDER.

TOPO Signature _____ Date _____

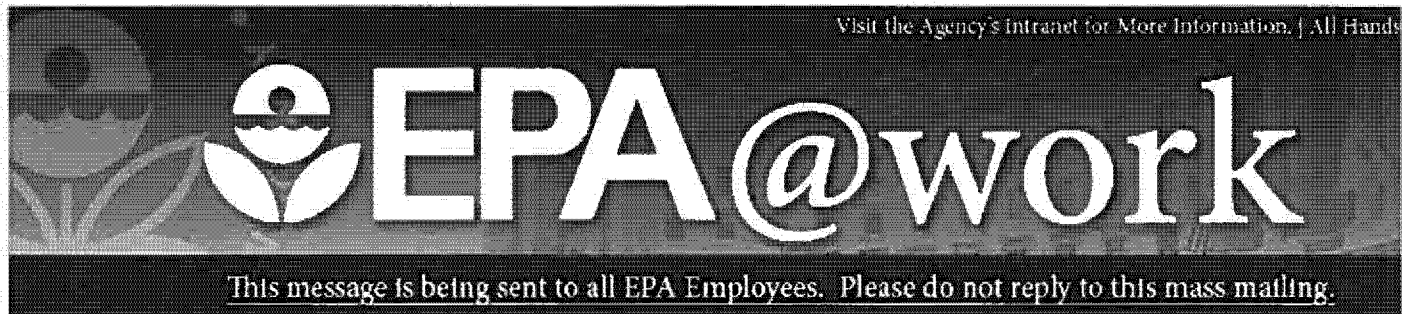
Original to Contractor

cc: TOPO file

Project Officer

Contracting Officer

Page 1 of 1



MEMORANDUM

SUBJECT: EPA Scientific Integrity Policy
FROM: Bob Perciasepe, Deputy Administrator
TO: All EPA Employees

Dear Colleagues:

Science is the backbone of EPA's decision-making, and the Agency's ability to pursue its mission to protect human health and the environment depends upon the integrity of the science on which it relies. As such, I am pleased to announce the enactment of a new Scientific Integrity Policy that builds on our long history of scientific safeguards and further ensures that sound science drives Agency decision making.

On March 9, 2009, President Obama issued an executive memorandum that articulated the need for sound science to inform and guide agency decisions on a wide range of issues, including improvement of public health, protection of the environment, increased efficiency in the use of energy and other resources, mitigation of the threat of climate change, and protection of national security. In response, the Office of Science and Technology Policy (OSTP) provided foundational principles and specific expectations for scientific integrity in the Federal government. In particular, OSTP asked the Federal agencies to develop scientific integrity policies that included four areas: scientific integrity in government, public communications, use of Federal Advisory Committees, and professional development of government scientists and engineers.

The final policy incorporates stakeholder input from the EPA Science and Technology Policy Council, OSTP, the public, and our Agency scientists. It also establishes a Scientific Integrity Committee to implement this policy and provide an annual report. In advance of completing the annual report, the Scientific Integrity Committee will conduct an Agency-wide annual meeting on scientific integrity that will include the involvement of senior EPA leadership, reports from offices and programs, and an opportunity for input from the EPA scientific community.

The environmental policies, decisions, guidance, and regulations that impact the lives of all Americans every day must be grounded, at a most fundamental level, in sound, high quality science. When dealing with science, it is the responsibility of every EPA employee to conduct, utilize, and communicate science with honesty, integrity, and transparency, both within and outside the Agency.

The Scientific Integrity Policy and its implementation have my full support, as well as the support of the Administrator, Science Advisor, and all Assistant and Regional Administrators. It is effective immediately and will ensure that science continues to drive our efforts to protect human health and the environment.

The complete policy is available at:

http://www.epa.gov/osa/pdfs/epa_scientific_integrity_policy_20120115.pdf



I want to thank each of you for your hard work on all the programs we are involved with to protect human health and the environment day in and day out. Your dedication on behalf of the citizens in Region III is very much appreciated by me, Administrator Jackson and the entire Agency.

One emerging area that has been a focus of our activities is energy extraction. Many of you have been involved in our efforts to control impacts to public health and the environment from mountaintop mining. Among other things, your groundbreaking work to develop the Agency's mining guidance and the veto of the Spruce Number 1 mine were significant parts of protecting the communities we serve.

As you all know, the Agency has also been closely involved with energy extraction issues in the Marcellus Shale natural gas formation under Pennsylvania, West Virginia, Maryland, Virginia, and New York. Concerns around natural gas extraction, including hydraulic fracturing, have come to the forefront due to the rapid acceleration of drilling and the subsequent environmental and health concerns that have been raised. The topic was also the subject of a series of recent New York Times articles, which explored a number of questions surrounding natural gas extraction and the effect on the health of our waters. Let me take a moment to convey what we are doing to dispel any confusion or misunderstandings around this complicated issue.

Last week, Administrator Jackson and I met with our regional staff working on natural gas extraction to discuss several of the issues that have been raised. As the Administrator said in her testimony to Congress last week, she believes the public deserves additional information on these issues. To follow through on this commitment, I am proud to say that Region III quickly acted to direct Pennsylvania Department of Environmental Protection to collect more data and review some of their NPDES permits, among other actions.

This letter can be found at
http://www.epa.gov/region03/marcellus_shale/PADEP_Marcellus_Shale_030711.pdf

I asked for Acting Secretary Krancer's support on our action plan and I am optimistic that EPA and the Commonwealth will be working closely in the months ahead on a number of fronts. In the meantime, EPA is undertaking a comprehensive study, lead by the Office of Research and Development, to gain a better understanding of how hydraulic fracturing might impact drinking water resources. Though this study is ongoing, we continue to work regionally and with state partners to ensure that natural gas extraction activities are done safely and in compliance with our existing authorities. As always, protecting public health is our top priority.

I am making a firm commitment that in Region III we will continue to investigate issues and activities related to potential drinking water impacts from underground injections and to community water systems. We will continue compliance determinations and evaluations of commercial wastewater treatment facilities and publicly owned treatment works. We will assess impacts to air quality and act on violations associated with construction activities. We will also continue our pursuit of the science that is needed to inform regional decisions, ensuring that information is made publicly available, and maintain a focus on environmental justice issues. Most importantly, if there is an imminent and substantial threat to the environment or the health of the people of Region III, we will take immediate action to institute protective measures.

Dealing with the environmental challenges presented by natural gas extraction is a top priority in this Region. The Administrator has assured me that we have the Agency's full support as we tackle this and other issues. All of you are encouraged to bring your expertise and creativity to bear on meeting these challenges.

As we move forward to address energy extraction issues in Marcellus Shale and other emerging issues,

we will continue to follow the principles of sound science, transparency and rule of law to protect human health and the environment. I thank you for all you are doing and will do in the future.

Again, thank you - Shawn

Shawn M. Garvin
Regional Administrator
EPA Region III



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029**

MAR 7 2011

The Honorable Michael Krancer, Acting Secretary
Pennsylvania Department of Environmental Protection
Rachel Carson State Office Building
400 Market Street
Harrisburg, Pennsylvania 17101


Dear Secretary Krancer:

The natural gas industry in Pennsylvania has grown with remarkable speed as the development of the Marcellus Shale proceeds. Natural gas is a key part of our energy independent future, but the rapid expansion of drilling activity in the Commonwealth places a special responsibility on our agencies and the U.S. to ensure that natural gas extraction is done safely and with public health protection as a priority.

The Pennsylvania Department of Environmental Protection (PADEP) has undertaken a number of important steps to strengthen protections. Examples include enhanced regulatory requirements for gas drilling operations; additional effluent standards for new and expanding wastewater treatment facilities that accept wastewater from gas drilling operations; and expanded ambient water quality monitoring to include chemicals that could indicate the presence of incompletely treated drilling wastewater. The U.S. Environmental Protection Agency (EPA) supports these actions and urges you to implement them aggressively.

Nevertheless, several sources of data, including reports required by PADEP, indicate that the wastewater resulting from gas drilling operations (including flowback from hydraulic fracturing and other fluids produced from gas production wells) contains variable and sometimes high concentrations of materials that may present a threat to human health and aquatic environment, including radionuclides, organic chemicals, metals and total dissolved solids. Many of these substances are not completely removed by wastewater treatment facilities, and their discharge may cause or contribute to impaired drinking water quality for downstream users, or harm aquatic life. In addition, high concentrations of these substances may adversely impact the treatment facilities themselves, impairing their ability to remove fecal coliform and other common contaminants in domestic sewage.

I believe it is critical to investigate the presence of these substances in the treated drinking water in affected watersheds and to inform the public as to whether and at what levels radionuclides occur in their water supply. At the same time, it is equally critical to examine the persistence of these substances, including radionuclides, in wastewater effluents and their potential presence in receiving waters. Such knowledge will be the basis for imposing the controls necessary to ensure that public health and the aquatic environment are protected.

 *Printed on 100% recycled/recyclable paper with 100% post-consumer fiber and process chlorine free.
Customer Service Hotline: 1-800-438-2474*

The most important near-term step is requiring community water systems (CWSs) near publicly owned treatment works (POTWs) and centralized wastewater treatment (CWT) facilities receiving Marcellus Shale wastewater to conduct sampling immediately for radionuclides. Since, in previous monitoring, radionuclides were not detected or were detected at levels less than one-half of maximum contaminant levels, the CWS have not sampled after the introduction of Marcellus Shale operations. Discharges from these operations could increase radionuclide levels substantially. To ensure public safety, additional sampling is needed. We understand that PADEP is considering requiring such sampling.

We are aware that PADEP has announced results of instream ambient water samples for radionuclides that were below federal drinking water standards for radium. Since concentrations of radionuclides may vary according to the source and volume of wastewater and receiving stream flow, we encourage sampling regimes that will account for such variability. We would like to discuss the sampling design with you. To facilitate these discussions, please provide the Region, as soon as possible, with (i) a list of the community water systems that will be required to conduct expedited monitoring, (ii) sampling parameters and frequency, and (iii) your schedule for initiating and completing these actions. It is my belief that, within 30 days, a sampling plan can be developed and initial samples collected.

Another critical step which we have previously discussed is to reopen the National Pollutant Discharge Elimination System (NPDES) permits of POTWs and centralized waste treatment facilities that are currently accepting gas drilling wastewater for treatment. These permits do not now include critical provisions necessary for effective processing and treatment of wastewaters from drilling operations. Again, it is welcome that you intend to reopen these permits. We encourage you to establish monitoring requirements and effluent limits to ensure protection of drinking water and aquatic life. To coordinate with PADEP productively, I ask that you provide the following information: (i) the identities and locations of all NPDES facilities in Pennsylvania accepting Marcellus Shale wastewater, (ii) a list of the permits you plan to reopen and the parameters you plan to consider for reasonable potential analysis, and (iii) a schedule for completing the permit modifications.

To augment these actions, EPA will be taking additional steps directly using our authorities. In Region III, these include, but are not limited to, issuing Clean Water Act information requests to CWT facilities and POTWs for compliance determinations and evaluation of the adequacy of NPDES permits; using pre-treatment authorities to ensure appropriate record keeping, reporting, and local limits for POTWs accepting this type of wastewater; and conducting inspections at well sites, associated construction activity, and treatment facilities. We welcome your participation in these inspections, and I have instructed my staff to coordinate with yours to commence these inspections as soon as possible.

In parallel, EPA will be sending very soon, a letter to CWT facilities and POTWs in the Marcellus Shale region attaching a set of Q&As providing guidance on all applicable legal requirements. Additionally, under the Safe Drinking Water Act, we will proceed with permit application review and issuance of Class II-D underground injection wells for disposal of fluids associated with gas production; inspection of permitted disposal wells; and enforcement of existing Underground Injection Control permits.



*Printed on 100% recycled/recyclable paper with 100% post-consumer fiber and process chlorine free.
Customer Service Hotline: 1-800-438-2474*

Further, we will be working with PADEP's Harrisburg and Regional offices on several issues related to management of Marcellus Shale wastewater, including reviewing NPDES permits for CWT facilities and POTWs; collecting information to help better characterize discharges of treated gas extraction wastewater; and providing information and training to POTW operators regarding acceptance of gas extraction wastewater at the upcoming 20th Annual Industrial Pretreatment Conference sponsored by Eastern Pennsylvania Water Pollution Control Operators Association, PADEP and EPA.

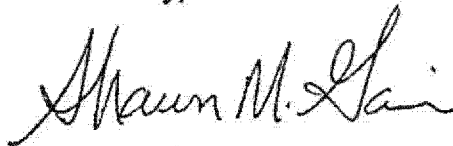
I stand ready to provide EPA's support and to utilize our federal authorities to require drinking water and wastewater monitoring if that becomes necessary. In addition, EPA is prepared to exercise its enforcement authorities as appropriate where our investigations reveal violations of federal law.

Separately, we will be coordinating with you on air pollution and waste impacts, and EPA's ongoing efforts to minimize those impacts.

These matters are indeed challenging. We look forward to working closely with you on the range of environmental issues raised by energy extraction activities to ensure that as these energy resources are developed they are done safely and with public health protection as a priority.

If you have any questions, please do not hesitate to contact me or have your staff contact Dr. Jennie Saxe, EPA's Pennsylvania Liaison, at (215) 814-5806.

Sincerely,



Shawn M. Garvin
Regional Administrator

11

11

11

11



Fw: Request for Qoute TechLaw Project No. TL01-11-12-001

Fred Foreman to: Mike Mahoney, Stevie Wilding, Sue Warner
Cc: Cynthia Caporale

01/09/2012 02:18 PM

From: Fred Foreman/ESC/R3/USEPA/US
To: Mike Mahoney/ESC/R3/USEPA/US@EPA, Stevie Wilding/ESC/R3/USEPA/US, Sue Warner/ESC/R3/USEPA/US@EPA
Cc: Cynthia Caporale/ESC/R3/USEPA/US@EPA

Sorry,

Here is the SOP for Isotech

Fred Foreman, Chief
Technical Services Branch
Office of Analytical Services & Quality Assurance
US EPA Region III
Ft. Meade, Maryland
410-305-2629

----- Forwarded by Fred Foreman/ESC/R3/USEPA/US on 01/09/2012 02:16 PM -----

From: Richard Rupert/R3/USEPA/US
To: "Fred Foreman" <Foreman.Fred@epamail.epa.gov>
Date: 01/09/2012 12:11 PM
Subject: Fw: Request for Qoute TechLaw Project No. TL01-11-12-001

Please let me you got it.

Richard Rupert
On-Scene Coordinator
Region III U.S.Environmental Protection Agency
1650 Arch Street, 3HS31
Philadelphia, PA 19103-2029
(215) 814-3463 FAX (215) 814-3254
e-mail rupert.richard@epa.gov

From: "Graves, Suddha" [Sgraves@TechLawInc.com]
Sent: 01/05/2012 05:13 PM EST
To: Richard Rupert
Subject: FW: Request for Qoute TechLaw Project No. TL01-11-12-001

Rich,
You had requested a copy of the SOPs that Isotech uses. See attachment.
Thanks

Suddha Graves
TechLaw, Inc.

From: Nance, Gene
Sent: Thursday, January 05, 2012 8:32 AM
To: Graves, Suddha; Carter, Joe
Subject: FW: Request for Qoute TechLaw Project No. TL01-11-12-001

See below re: data package to be provided by Isotech. Also, their QAPP is attached. Feel free to forward to OSCs/OASQA.

We have included all the below mentioned items in our RFQ – QC data, calibration, chromatograms, Raw data.

Gene Nance
TechLaw, Inc.
740.867.0968 (office)
304.830.1442 (mobile)

From: Legner, Christy [<mailto:legner@isotechlabs.com>]
Sent: Wednesday, December 28, 2011 9:30 AM
To: Nance, Gene
Subject: RE: Request for Qoute TechLaw Project No. TL01-11-12-001

Hi Gene-

The data that we typically provide is an excel spreadsheet and a pdf analysis report. We can provide additional QA/QC if that is required. We don't have anything labeled as a IV/CLP data package but I have done work with the EPA before and they typically want as much data as possible. We can provide all standards and duplicates run on the GC, prep benches and Mass specs (they all have qa/qc requirements for system and data validation). The cost for that is \$25. If you want more such as raw chromatograms, mass spec print outs, calibration information etc, that is 20% of total invoice cost. I have also attached our QAP to give you an idea of our quality control.

Thanks,

Christy Legner
QC Manager
Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821-1826
PH#: 217-398-3490
FAX#: 217-398-3493

From: Nance, Gene [<mailto:Gnance@TechLawInc.com>]
Sent: Wednesday, December 28, 2011 8:19 AM
To: Legner, Christy
Subject: RE: Request for Qoute TechLaw Project No. TL01-11-12-001

Christy,
What type of data package do you provide? We will have the data validated and normally get a Level

IV/CLP-equivalent data package. Is this available and is there any associated cost?

Gene Nance
TechLaw, Inc.
740.867.0968 (office)
304.830.1442 (mobile)

From: Legner, Christy [<mailto:legner@isotechlabs.com>]
Sent: Wednesday, December 28, 2011 9:10 AM
To: Nance, Gene
Subject: RE: Request for Quote TechLaw Project No. TL01-11-12-001

Gene- no, we do not have any method numbers for these analyses. Our compositional analysis is *based* on the ASTM-1945 method, but it is not identical.

Christy Legner
QC Manager
Isotech Laboratories, Inc.
1308 Parkland Court
Champaign, IL 61821-1826
PH#: 217-398-3490
FAX#: 217-398-3493

From: Nance, Gene [<mailto:Gnance@TechLawInc.com>]
Sent: Tuesday, December 27, 2011 3:46 PM
To: Legner, Christy
Subject: RE: Request for Quote TechLaw Project No. TL01-11-12-001

Christy,
Do you have method numbers for any of the tests?

Gene Nance
TechLaw, Inc.
740.867.0968 (office)
304.830.1442 (mobile)

From: Legner, Christy [<mailto:legner@isotechlabs.com>]
Sent: Tuesday, December 27, 2011 2:59 PM
To: Nance, Gene
Subject: RE: Request for Quote TechLaw Project No. TL01-11-12-001

Hi Gene-

Attached is a price quote. The items that you have "Isotech" by are all analyses we are able to do. We can also calculate the dissolved methane, ethane and ethene. We require that a complete compositional analysis be done before we can analyze isotopes (or calculate dissolved gas concentrations), so I have added that to the price quote. The scope of work indicated that all analyses would need 15 day turnaround time. Because we have different TAT's for different analyses I have

indicated in bold the priority level that would get you the data in 15 business days.

In terms of "detection limits", I mentioned they are concentration and volume dependent. With water bottles we are looking at probably 60cc (at most) of headspace gas to analyze so that would mean the concentration of methane needs to be about 1% to obtain both carbon and hydrogen isotopes using our traditional offline prep/dual inlet method. The concentration can be lower (about 2000ppm or 0.2%) if you want GC-C-IRMS/GC-P-IRMS analysis (or continuous flow). The disadvantages are the precision and accuracy aren't as good, but you would still have isotope values (and at a lesser cost). The detection limit for C14 analysis will be higher. We would need about 2% for C14 analysis (with approx 60cc of headspace). These numbers are rough estimates based on what I think the headspace of the bottle will be, but we won't know for sure until we actually get the samples and start analyzing.

Please let me know if you have any other questions or if there is anything I didn't answer.

Christy Legner

QC Manager

Isotech Laboratories, Inc.

1308 Parkland Court

Champaign, IL 61821-1826

PH#: 217-398-3490

FAX#: 217-398-3493

From: Nance, Gene [<mailto:Gnance@TechLawInc.com>]

Sent: Tuesday, December 27, 2011 1:08 PM

To: Legner, Christy

Subject: Request for Qoute TechLaw Project No. TL01-11-12-001

Christie,

Attached is the scope of work. It includes provisions for the laboratory. Due to the short time frame, we can procure the bottle ware and preservatives, but would need a list of requirements for the individual tests.

Don't hesitate to call if you have any questions.

Thanks.



<http://www.eset.com> QAP.pdf

PROGRAM QUALITY ASSURANCE PROJECT PLAN

For

**Sample Collection and Analysis
for START IV Sampling Activities
EPA Region III
EP-S3-10-04-1**



July 2010

Business Confidential

[illegible]

DIM0197221

DIM0197252

A. PROJECT MANAGEMENT

This document is the Program Quality Assurance Project Plan (PQAPP) for Sample Collection and Analysis at facilities subject to oversight under the Superfund Technical Assessment and Response Team (START) contract in U.S. EPA Region III. The PQAPP will be used in conjunction with a facility-specific Sampling and Analysis Plan (SAP) which will be prepared for each field sampling event. The PQAPP presents a protocol for sample collection and analysis by providing the management policies, data quality objectives, and specific procedures to assure that reliable and valid data will be generated during sampling events.

A.1 Project/Task Organization

The START sampling investigations in Region III are administered under TechLaw's START Region III Contract. Multiple individual assignments are conducted concurrently throughout the Region. The TechLaw management structure has been designed to assure effective and consistent management of all work assignments. The TechLaw management plan and quality assurance (QA) policies are described in detail in the TechLaw *Quality Management Plan for Region III Superfund Technical Assessment and Response Team, EP-S3-10-04*, July 2010. Quality assurance is the responsibility of TechLaw for all work conducted by TechLaw and TechLaw subcontractors under the contract.

A.1.1 Roles and Responsibilities

The START management structure is designed so that QA occurs at the management level and is organized independently of the technical operations which are responsible for quality control (QC) at the work assignment level.

The TechLaw Corporate Sponsor is accountable for total contract performance, is responsible for corporate commitment to the U.S. EPA program, and assures responsiveness to U.S. EPA. The Corporate Sponsor is also responsible for overall program management and operations. The Corporate Sponsor actively monitors QA progress on contract activities.

Primary responsibility for quality assurance is designated as a staff function to the Quality Assurance Officer (QAO) or designee. The QA function encompasses establishment of QA policies, standards and implementation plans; assessment of performance-quality risks associated with planned and ongoing assignments; execution of QA audits to provide independent feedback concerning the effectiveness of the QA/QC process; managerial and technical troubleshooting and problem solving; and development of periodic QA assessment reports. TechLaw's QAO reports directly and has independent access to TechLaw's President/Corporate Sponsor, when necessary, to resolve QA/QC issues.

Business Confidential

115

116

117

118

119

120

Mail - Dimock - IBM Lotus Notes

File Edit View Create Actions Tools Window Help

Mike Mahoney

20111905 X Human-Env X Fw: 2712E X US EPA R X BNAvent Re: X Error X

Mike Mahoney

RJESCHMAIL1

11fms
AFGE-Aurora
Afge-Shin
Arbitration-2
attaboys
best ever
B.S. (1)
detail permission
Dimock (2)
Dottie (31)
DuPont
DV- triggered issues
DV-workgroup
ESC (7)
Hickory
HR+ORC
Jackson ceramics (1)
Kim Stan
Library InfoSearch
Linda
Master Notes (1)
Mercury
Pay Pal
nonnonlinec

Records • New • Reply • Forward • More • Show

Who	Subject	Date	Size
Stevie Wilding	Attachments for lab support for Dimock	01/05/2012 02:25 PM	1.4M
Nance, Gene	RE: Attachments for lab support for Dimock	01/05/2012 02:46 PM	8K
Nance, Gene	RE: Requested Expedited TATs for Dimock/EDD	01/05/2012 04:06 PM	967K
Stevie Wilding	Fw: Separated Labs for the Dimock site	01/05/2012 05:49 PM	37K
Cynthia Caporale	Re: Fw: Separated Labs for the Dimock site	01/06/2012 08:31 AM	5K
Cynthia Caporale	Re: Fw: Separated Labs for the Dimock site	01/06/2012 09:01 AM	39K
Cynthia Caporale	Status of Dimock GW Site	01/06/2012 03:24 PM	9K
Fred Foreman	Re: Fw: Dimock - Analytical Requests	01/09/2012 05:30 PM	518K
Jennifer Hubbard	Re: Somebody give this a look over and give me a call- time sensitive	01/09/2012 05:38 PM	15K
Cynthia Caporale	Dimock GW Site - Lab Status Meeting	01/10/2012 01:18 PM	2K
Cynthia Caporale	Fw: Status of Dimock GW Site	01/10/2012 01:32 PM	11K
Cynthia Caporale	Fw: Dimock - Analytical Requests	01/10/2012 05:06 PM	523K
Cynthia Caporale	Status of Dimock GW Site for 1/10/12	01/10/2012 05:18 PM	14K
Cynthia Caporale	Dimock GW Site - No Sampling this Week	01/11/2012 11:33 AM	1K
Cynthia Caporale	Status of Dimock GW Site for 1/13/12	01/13/2012 03:51 PM	6K
Cynthia Caporale	Dimock Residential GW Site - OSC Page	01/19/2012 04:23 PM	3K
Stevie Wilding	Status of Analytical Requests for Dimock	01/19/2012 06:16 PM	163K
Stevie Wilding	Dimock-- Data Deliverable Requirements	01/19/2012 06:54 PM	177K
Stevie Wilding	Status of Analytical Requests for Dimock-- with R2, R9 and NAREL request	01/19/2012 08:57 PM	331K
Stevie Wilding	Sampling Schedule for Dimock Jan 23-27, 2012	01/23/2012 01:43 PM	4K
John Bourbon	Re: Sampling Schedule for Dimock Jan 23-27, 2012	01/23/2012 04:44 PM	10K
Cynthia Caporale	Data Review	01/24/2012 09:01 AM	2K
Cynthia Caporale	Dimock GW Site - Day One	01/24/2012 11:41 AM	1K

Follow Up

start

Mail - Dimock - IBM Lotus Notes

Document - Microsoft Word

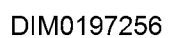
Microsoft Office Word

Microsoft Office Word

People Plus - Google

Office (Network)

1:40 PM



ASTM D2330-02**Withdrawn Standard: ASTM D2330-02 Standard Test Method for Methylene Blue Active Substances (Withdrawn 2011)**

Developed by Subcommittee: D19.06

WITHDRAWN, NO REPLACEMENT

Buy Standard (PDF)

more info

8 pages

\$ 48

Withdrawn Rationale:

Formerly under the jurisdiction of Committee D19 on Water, this Test Method was withdrawn in 2011 in accordance with section 10.5.3.1 of the Regulations Governing ASTM Technical Committees, which requires that standards shall be updated by the end of the eighth year since the last approval date.

1. Scope

1.1 This test method covers the determination of compounds that react with methylene blue under the conditions specified in the test procedure. They are referred to as methylene blue active substances (MBAS), and are calculated and reported in terms of the reference material, linear alkyl benzene sulfonate, LAS.

1.2 This test method is applicable for determining MBAS in water and wastewater. It is the user's responsibility to ensure the validity of this test method for waters of untested matrices.

1.3 This test method is a simple, rapid, control procedure suitable for monitoring the effectiveness of a biodegradation or other linear alkyl benzene sulfonate (LAS) removal process. For greater specificity and interference removal, the pretreatment procedure in should be used. Data derived without the pretreatment procedure should be interpreted with care. This test method is applicable in the range from 0.03 to 1.5 mg/L for a 100-mL sample.


1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* For a specific hazard statement, see 8.3.

Index Terms

chloroform; extraction; hydrophobic ions; linear alkyl benzene sulfonate;

methylene blue; spectrophotometer;

DOI: 10.1520/D2330-02

 ASTM International is a member of CrossRef.

Citing ASTM Standards

[[Back to Top](#)]

Copyright © 1996-2012 ASTM. All Rights Reserved.

ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428-2959 USA